



Project Profile

Integral Waterproofing Ketch Lake Dam



Project:

Ketch Lake Dam

Location:

Fort Sill, OK

Owner:

Army Corps of Engineers

Engineer:

Army Corps of Engineers

Contractor:

M.L. Young Construction

Concrete Producer:

Lawton Transit Mix

Products:

MasterLife® 300D
integral waterproofing admixture

MasterSet® DELVO
hydration-controlling admixture

MasterPolyheed® 1020
mid-range water-reducing admixture

Market Sector:

Ready-mixed concrete

Ketch Lake Dam, built by the landowner Frank Ketch in the 1930's, was built of cobblestone and was a stock pond for cattle. Subsequently, it became a recreational pond. When the dam started giving way in 2010, the Army Corps of Engineers decided to build a new dam directly behind the existing dam. The new dam is 36 feet (11 m) high, 140 feet (43 m) wide and 6 feet (1.8 m) thick at the top and 80 feet (24 m) wide and 20 feet (6 m) thick at the bottom.



The Challenge

For this mass concrete application, the specifications required the concrete temperature at the point of delivery to be below 85 °F (29 °C). Additionally, the concrete had to be watertight.

The Solution

Concrete producer Lawton Transit Mix of Lawton, Oklahoma, supplied a total of 900 cubic yards (700 cubic meters) of concrete containing MasterLife 300D integral waterproofing admixture from Master Builders Solutions for the dam. Temperature control was critical for the hour-long haul covering 20 miles (32 km) and with over 90 °F (32 °C) ambient temperatures. Lawton Transit Mix used slag cement, Class C fly ash, chilled water, and MasterSet DELVO hydration-controlling admixture from Master Builders Solutions to reduce the heat of hydration of the concrete mixture. The concrete produced met the requirements specified by the Army Corps of Engineers and the concrete was placed successfully in 6 to 8 feet (1.8 to 2.4 m) lifts.

Master Builders Solutions

The Master Builders Solutions brand brings expertise to create chemical solutions for construction using experience gained from more than a century in the construction industry.

The know-how and experience of a global community of construction experts form the core of Master Builders Solutions. We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction.

The comprehensive portfolio under the Master Builders Solutions brand encompasses concrete admixtures, cement additives, chemical solutions for underground construction, fiber reinforcement solutions and waterproofing solutions.